

CLAIMS:

What is claimed is:

1. A hormone for eliciting a desired response comprising at least one modified $\Delta 5$ -androstene compound.
2. The hormone according to claim 1, wherein said hormone is modified at the 3rd carbon with one or more of the following: tetrahydropyranyl (both mono and di-ethers), 1-methoxycyclopentane (both mono and di-ethers), cyclopent-1'-enyl (both mono and di-ethers), or combinations thereof.
3. The hormone according to claim 1, wherein said hormone is modified at the 17th carbon with at least one of the following: tetrahydropyranyl (both mono and di-ethers), 1-methoxycyclopentane (both mono and di-ethers), cyclopent-1'-enyl (both mono and di-ethers), or combinations thereof.
4. The hormone according to claim 1, wherein said hormone is modified at both the 3rd and 17th carbons with at least one of the following: tetrahydropyranyl (both mono and di-ethers), 1-methoxycyclopentane (both mono and di-ethers), cyclopent-1'-enyl (both mono and di-ethers), or combinations thereof.

5. The hormone according to claim 1 wherein the at least one modified Δ 5-androstene compound is selected from the group consisting of

Δ 5-Androstene-7 α -one-3 β ,17 β -diol;

Δ 5-Androstene-3 β ,7 α -diol-17 β -one;

5 Δ 5-Androstene-7 α -ol-3 β ,17 β -dione;

Δ 5-Androstene-3 β -acetoxy-7,16-dione-17 β -ol;

Δ 5-Androstene-7 α ,16 α -dione-3 β ,17 β -diol;

Δ 5-Androstene-7 α -one-3 β ,16 α ,17 β -triol;

Δ 5-Androstene-3 β -propionoxy-16 β -acetoxy-7-one-17 β -ol;

10 Δ 5-Androstene-7 α -one-16 β -acetoxy-3 β ,17 β -diol;

Δ 5-Androstene-16 α -one-3 β ,7 α ,17 β -triol;

Δ 5-Androstene- 7 α -one-3 β , 16 α ,17 β -triol;

Δ 5-Androstene-3 β -ol-7-one-17 β -(1-methoxycyclopentane);

Δ 5-Androstene-7-one-3 β ,17 β -di(1-methoxycyclopentane);

15 Δ 5-Androstene-7-one-17 β -hydroxy-3-(1-methoxycyclopentane);

Δ 5-Androstene-3 β ,7 α -diol-17 β -(1-methoxycyclopentane);

Δ 5-Androstene-7 α -ol-3 β ,17 β -di(1-methoxycyclopentane);

Δ 5-Androstene-7 α , 17 β -dihydroxy-3 β (1-methoxycyclopentane);

Δ 5-Androstene-3 β -ol-7-one-17 β -(1-methoxycyclopentane);

20 Δ 5-Androstene-7-one-3 β ,17 β -di(1-methoxycyclopentane);

Δ 5-Androstene-17 β -ol-7-one-3 β -(1-methoxycyclopentane);

Δ 5-Androstene-3 β -acetoxy-7,16-dione-17 β -(1-methoxycyclopentane);

- 25 Δ 5-Androstene-7,16-dione-3beta,17beta-di(1-methoxycyclopentane);
- Δ 5-Androstene-3beta,16alpha-dihydroxy-7-one-17beta-(1-methoxycyclopentane);
- Δ 5-Androstene-7-one-16alpha-hydroxy-3beta,17beta-di(1-methoxycyclopentane);
- Δ 5-Androstene-3beta-propionyloxy-16beta-acetoxy-7-one-17beta-(1-methoxycyclopentane);
- 30 Δ 5-Androstene-7-one-16beta-acetoxy-3beta,17beta-di(1-methoxycyclopentane) ;
- Δ 5-Androstene-3beta,7alpha-diol-16-one-17beta-(1-methoxycyclopentane);
- Δ 5-Androstene-7alpha-ol-16-one-3beta,17beta-di(1-methoxycyclopentane);
- Δ 5-Androstene-7alpha,17beta-dihydroxy-16-one-3beta, -(1-methoxycyclopentane);
- 35 Δ 5-Androstene-3beta-ol-7,16-dione-17beta-(1-methoxycyclopentane);
- Δ 5-Androstene-17beta-ol-7,16-dione-3beta-(1-methoxycyclopentane);
- Δ 5-Androstene-7,16-dione-3beta,17beta-di(1-methoxycyclopentane);
- Δ 5-Androstene-3beta,16alpha-diol,7-one-17beta-(1-methoxycyclopentane);
- Δ 5-Androstene-16alpha-ol,7-one-3beta,17beta-di(1-methoxycyclopentane);
- 40 Δ 5-Androstene-16alpha,17beta-dihydroxy,7-one-3beta-(1-methoxycyclopentane);
- Δ 5-Androstene-3beta-ol-7-one-17beta-cyclopent-1'-enyl;
- Δ 5-Androstene-7-one-3beta,17beta-dicyclopent-1'-enyl;
- Δ 5-Androstene-7-one-17beta-hydroxy-3beta-cyclopent-1'-enyl
- Δ 5-Androstene-3beta,7alpha-diol-17beta-cyclopent-1'-enyl;

45 Δ 5-Androstene-7 α -ol-3 β ,17 β -dicyclopent-1'-enyl;
 Δ 5-Androstene-7 α ,17 β -dihydroxy-3 β -cyclopent-1'-enyl;
 Δ 5-Androstene-3 β -ol-7-one-17 β -cyclopent-1'-enyl;
 Δ 5-Androstene-7-one-3 β ,17 β -dicyclopent-1'-enyl;
 Δ 5-Androstene-17 β -ol-7-one-3 β -cyclopent-1'-enyl;
 50 Δ 5-Androstene-3 β -acetoxy-7,16-dione-17 β -cyclopent-1'-enyl;
 Δ 5-Androstene-7,16-dione-3 β ,17 β -dicyclopent-1'-enyl;
 Δ 5-Androstene-3 β ,16 α -dihydroxy-7-one-17 β -cyclopent-1'-enyl;
 Δ 5-Androstene-7-one-16 α -hydroxy-3 β ,17 β -dicyclopent-1'-enyl;
 Δ 5-Androstene-3 β -propionyloxy-16 β -acetoxy-7-one-17 β -cyclopent-1'-
 55 enyl;
 Δ 5-Androstene-7-one-16 β -acetoxy-3 β ,17 β -dicyclopent-1'-enyl;
 Δ 5-Androstene-3 β ,7 α -diol-16-one-17 β -cyclopent-1'-enyl;
 Δ 5-Androstene-7 α -ol-16-one-3 β ,17 β -dicyclopent-1'-enyl;
 Δ 5-Androstene-7 α ,17 β -dihydroxy-16-one-3 β -cyclopent-1'-enyl;
 60 Δ 5-Androstene-3 β -ol-7,16-dione-17 β -cyclopent-1'-enyl;
 Δ 5-Androstene-7,16-dione-3 β ,17 β -dicyclopent-1'-enyl;
 Δ 5-Androstene-17 β -ol-7,16-dione-3 β -cyclopent-1'-enyl;
 Δ 5-Androstene-3 β ,16 α -diol,7-one-17 β -cyclopent-1'-enyl;
 Δ 5-Androstene-16 α -ol,7-one-3 β ,17 β -dicyclopent-1'-enyl;
 65 Δ 5-Androstene-16 α ,17 β -diol,7-one-3 β -cyclopent-1'-enyl;
 Δ 5-Androstene-3 β -ol-7-one-17 β -tetrahydropyranyl;

Δ 5-Androstene-7-one-3beta,17beta-ditetrahydropyranyl;
 Δ 5-Androstene-17beta-ol-7-one-3beta-tetrahydropyranyl;
 Δ 5-Androstene-3beta,7alpha-diol-17beta-tetrahydropyranyl;
 70 Δ 5-Androstene-7alpha-ol-3beta,17beta-ditetrahydropyranyl;
 Δ 5-Androstene-3beta-ol-7-one-17beta-tetrahydropyranyl;
 Δ 5-Androstene-7-one-3beta,17beta-ditetrahydropyranyl;
 Δ 5-Androstene-17beta-ol-7-one-3beta-tetrahydropyranyl;
 Δ 5-Androstene-3beta-acetoxy-7,16-dione-17beta-tetrahydropyranyl;
 75 Δ 5-Androstene-7,16-dione-3beta,17beta-ditetrahydropyranyl;
 Δ 5-Androstene-3beta,16alpha-dihydroxy-7-one-17beta-tetrahydropyranyl;
 Δ 5-Androstene-7-one-16alpha-hydroxy-3beta,17beta-ditetrahydropyranyl;
 Δ 5-Androstene-16alpha,17beta-dihydroxy-7-one-3beta-tetrahydropyranyl;
 Δ 5-Androstene-3beta-propionoxy-16beta-acetoxy-7-one-17beta-
 80 tetrahydropyranyl;
 Δ 5-Androstene-7-one-16beta-acetoxy-3beta,17beta-ditetrahydropyranyl;
 Δ 5-Androstene-3beta,7alpha-diol-16-one-17beta-tetrahydropyranyl;
 Δ 5-Androstene-7alpha-ol-16-one-3beta,17beta-ditetrahydropyranyl;
 Δ 5-Androstene-7alpha,17beta-diol-16-one-3beta-tetrahydropyranyl;
 85 Δ 5-Androstene-3beta-ol-7,16-dione-17beta-tetrahydropyranyl;
 Δ 5-Androstene-7,16-dione-3beta,17beta-ditetrahydropyranyl;
 Δ 5-Androstene-17beta-ol-7,16-dione-3beta-tetrahydropyranyl;
 Δ 5-Androstene-3beta,16alpha-diol,7-one-17beta-tetrahydropyranyl;

Δ 5-Androstene-16 α -ol,7-one-3 β ,17 β -ditetrahydropyranyl; and

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Δ 5-Androstene-6 α ,17 β -diol,7-one-3 β -tetrahydropyranyl.

6. The hormone of claim 5 wherein the modification produces a substantial increase in oral bioavailability and plasma half life in mammals as compared to non-modified $\Delta 5$ -androstene compounds.

7. A method for using a hormone to elicit a desired response comprising: administering an effective amount of a supplement having at least one modified Δ 5-androstene compounds selected from the group consisting of

Δ 5-Androstene-7 α -one-3 β ,17 β -diol;

5 Δ 5-Androstene-3 β ,7 α -diol-17 β -one;

Δ 5-Androstene-7 α -ol-3 β ,17 β -dione;

Δ 5-Androstene-3 β -acetoxy-7,16-dione-17 β -ol;

Δ 5-Androstene-7 α ,16 α -dione-3 β ,17 β -diol;

Δ 5-Androstene-7 α -one-3 β ,16 α ,17 β -triol;

10 Δ 5-Androstene-3 β -propionoxy-16 β -acetoxy-7-one-17 β -ol;

Δ 5-Androstene-7 α -one-16 β -acetoxy-3 β ,17 β -diol;

Δ 5-Androstene-16 α -one-3 β ,7 α ,17 β -triol;

Δ 5-Androstene- 7 α -one-3 β , 16 α ,17 β -triol;

Δ 5-Androstene-3 β -ol-7-one-17 β -(1-methoxycyclopentane);

15 Δ 5-Androstene-7-one-3 β ,17 β -di(1-methoxycyclopentane);

Δ 5-Androstene-7-one-17 β -hydroxy-3-(1-methoxycyclopentane);

Δ 5-Androstene-3 β ,7 α -diol-17 β -(1-methoxycyclopentane);

Δ 5-Androstene-7 α -ol-3 β ,17 β -di(1-methoxycyclopentane);

Δ 5-Androstene-7 α , 17 β -dihydroxy-3 β (1-methoxycyclopentane);

20 Δ 5-Androstene-3 β -ol-7-one-17 β -(1-methoxycyclopentane);

Δ 5-Androstene-7-one-3beta,17beta-di(1-methoxycyclopentane);
 Δ 5-Androstene-17beta-ol-7-one-3beta-(1-methoxycyclopentane);
 Δ 5-Androstene-3beta-acetoxy-7,16-dione-17beta-(1-methoxycyclopentane);
 Δ 5-Androstene-7,16-dione-3beta,17beta-di(1-methoxycyclopentane);
 25 Δ 5-Androstene-3beta,16alpha-dihydroxy-7-one-17beta-(1-
 methoxycyclopentane);
 Δ 5-Androstene-7-one-16alpha-hydroxy-3beta,17beta-di(1-
 methoxycyclopentane);
 Δ 5-Androstene-3beta-propionyloxy-16beta-acetoxy-7-one-17beta-(1-
 30 methoxycyclopentane);
 Δ 5-Androstene-7-one-16beta-acetoxy-3beta,17beta-di(1-methoxycyclopentane) ;
 Δ 5-Androstene-3beta,7alpha-diol-16-one-17beta-(1-methoxycyclopentane);
 Δ 5-Androstene-7alpha-ol-16-one-3beta,17beta-di(1-methoxycyclopentane);
 Δ 5-Androstene-7alpha,17beta-dihydroxy-16-one-3beta,-(1-
 35 methoxycyclopentane);
 Δ 5-Androstene-3beta-ol-7,16-dione-17beta-(1-methoxycyclopentane);
 Δ 5-Androstene-17beta-ol-7,16-dione-3beta-(1-methoxycyclopentane);
 Δ 5-Androstene-7,16-dione-3beta,17beta-di(1-methoxycyclopentane);
 Δ 5-Androstene-3beta,16alpha-diol,7-one-17beta-(1-methoxycyclopentane);
 40 Δ 5-Androstene-16alpha-ol,7-one-3beta,17beta-di(1-methoxycyclopentane);
 Δ 5-Androstene-16alpha,17beta-dihydroxy,7-one-3beta-(1-methoxycyclopentane);
 Δ 5-Androstene-3beta-ol-7-one-17beta-cyclopent-1'-enyl;

Δ 5-Androstene-7-one-3beta,17beta-dicyclopent-1'-enyl;
 Δ 5-Androstene-7-one-17beta-hydroxy-3beta-cyclopent-1'-enyl
 45 Δ 5-Androstene-3beta,7alpha-diol-17beta-cyclopent-1'-enyl;
 Δ 5-Androstene-7alpha-ol-3beta,17beta-dicyclopent-1'-enyl;
 Δ 5-Androstene-7alpha,17beta-dihydroxy-3beta-cyclopent-1'-enyl;
 Δ 5-Androstene-3beta-ol-7-one-17beta-cyclopent-1'-enyl;
 Δ 5-Androstene-7-one-3beta,17beta-dicyclopent-1'-enyl;
 50 Δ 5-Androstene-17beta-ol-7-one-3beta-cyclopent-1'-enyl;
 Δ 5-Androstene-3beta-acetoxy-7,16-dione-17beta-cyclopent-1'-enyl;
 Δ 5-Androstene-7,16-dione-3beta,17beta-dicyclopent-1'-enyl;
 Δ 5-Androstene-3beta,16alpha-dihydroxy-7-one-17beta-cyclopent-1'-enyl;
 Δ 5-Androstene-7-one-16alpha-hydroxy-3beta,17beta-dicyclopent-1'-enyl;
 55 Δ 5-Androstene-3beta-propionoxy-16beta-acetoxy-7-one-17beta-cyclopent-1'-
 enyl;
 Δ 5-Androstene-7-one-16beta-acetoxy-3beta,17beta-dicyclopent-1'-enyl;
 Δ 5-Androstene-3beta,7alpha-diol-16-one-17beta-cyclopent-1'-enyl;
 Δ 5-Androstene-7alpha-ol-16-one-3beta,17beta-dicyclopent-1'-enyl;
 60 Δ 5-Androstene-7alpha,17beta-dihydroxy-16-one-3beta-cyclopent-1'-enyl;
 Δ 5-Androstene-3beta-ol-7,16-dione-17beta-cyclopent-1'-enyl;
 Δ 5-Androstene-7,16-dione-3beta,17beta-dicyclopent-1'-enyl;
 Δ 5-Androstene-17beta-ol-7,16-dione-3beta-cyclopent-1'-enyl;
 Δ 5-Androstene-3beta,16alpha-diol,7-one-17beta-cyclopent-1'-enyl;

65 Δ 5-Androstene-16 α -ol,7-one-3 β ,17 β -dicyclopent-1'-enyl;
 Δ 5-Androstene-16 α ,17 β -diol,7-one-3 β -cyclopent-1'-enyl;
 Δ 5-Androstene-3 β -ol-7-one-17 β -tetrahydropyranyl;
 Δ 5-Androstene-7-one-3 β ,17 β -ditetrahydropyranyl;
 Δ 5-Androstene-17 β -ol-7-one-3 β -tetrahydropyranyl;
70 Δ 5-Androstene-3 β ,7 α -diol-17 β -tetrahydropyranyl;
 Δ 5-Androstene-7 α -ol-3 β ,17 β -ditetrahydropyranyl;
 Δ 5-Androstene-3 β -ol-7-one-17 β -tetrahydropyranyl;
 Δ 5-Androstene-7-one-3 β ,17 β -ditetrahydropyranyl;
 Δ 5-Androstene-17 β -ol-7-one-3 β -tetrahydropyranyl;
75 Δ 5-Androstene-3 β -acetoxy-7,16-dione-17 β -tetrahydropyranyl;
 Δ 5-Androstene-7,16-dione-3 β ,17 β -ditetrahydropyranyl;
 Δ 5-Androstene-3 β ,16 α -dihydroxy-7-one-17 β -tetrahydropyranyl;
 Δ 5-Androstene-7-one-16 α -hydroxy-3 β ,17 β -ditetrahydropyranyl;
 Δ 5-Androstene-16 α ,17 β -dihydroxy-7-one-3 β -tetrahydropyranyl;
80 Δ 5-Androstene-3 β -propionoxy-16 β -acetoxy-7-one-17 β -
tetrahydropyranyl;
 Δ 5-Androstene-7-one-16 β -acetoxy-3 β ,17 β -ditetrahydropyranyl;
 Δ 5-Androstene-3 β ,7 α -diol-16-one-17 β -tetrahydropyranyl;
 Δ 5-Androstene-7 α -ol-16-one-3 β ,17 β -ditetrahydropyranyl;
85 Δ 5-Androstene-7 α ,17 β -diol-16-one-3 β -tetrahydropyranyl;
 Δ 5-Androstene-3 β -ol-7,16-dione-17 β -tetrahydropyranyl;

Δ 5-Androstene-7,16-dione-3β,17β-ditetrahydropyranyl;

Δ 5-Androstene-17β-ol-7,16-dione-3β-tetrahydropyranyl;

Δ 5-Androstene-3β,16α-diol,7-one-17β-tetrahydropyranyl;

Δ 5-Androstene-16α-ol,7-one-3β,17β-ditetrahydropyranyl; and

Δ 5-Androstene-6α,17β-diol,7-one-3β-tetrahydropyranyl.

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8. The method according to claim 7 wherein the desired response comprises at least one of the following: improving weight loss by increasing fat reduction, increasing energy, reducing fatigue, increasing T3 thyroid hormone activity, or combinations thereof.
 9. The method according to claim 7 wherein said hormone is modified at the 3rd carbon with at least one of the following: tetrahydropyranyl (both mono and di-ethers), 1-methoxycyclopentane (both mono and di-ethers), cyclopent-1'-enyl (both mono and di-ethers), or combinations thereof.
 10. The method according to claim 7 wherein said hormone is modified at the 17th carbon with at least one of the following: tetrahydropyranyl (both mono and di-ethers), 1-methoxycyclopentane (both mono and di-ethers), cyclopent-1'-enyl (both mono and di-ethers), or combinations thereof.
 11. The method according to claim 7 wherein said hormone is modified at both the 3rd and 17th carbons with at least one of the following: tetrahydropyranyl (both mono and di-

- ethers), 1-methoxycyclopentane (both mono and di-ethers), cyclopent-1'-enyl (both mono and di-ethers), or combinations thereof.
12. The method of claim 7 wherein the desired response includes an improved immune response, improved neurological condition, improved memory, increased fat reduction, increased energy or combinations thereof.
 13. The method of claim 7 wherein the at least one modified $\Delta 5$ -androstene compounds produces a substantial increase in oral bioavailability and plasma half-life in mammals as compared to non-modified $\Delta 5$ -androstene compounds.
 14. The method of claim 8 wherein the at least one modified $\Delta 5$ -androstene compounds produces a substantial increase in oral bioavailability and plasma half-life in mammals as compared to non-modified $\Delta 5$ -androstene compounds.

15. A method for eliciting a desired response using a hormone comprising: administering an effective amount of compound selected from the group consisting of

Δ 5-Androstene-7α-one-3β,17β-diol;
Δ 5-Androstene-3β,7α-diol-17β-one;
5 Δ 5-Androstene-7α-ol-3β,17β-dione;
Δ 5-Androstene-3β-acetoxy-7,16-dione-17β-ol;
Δ 5-Androstene-7α,16α-dione-3β,17β-diol;
Δ 5-Androstene-7α-one-3β,16α,17β-triol;
Δ 5-Androstene-3β-propionyloxy-16β-acetoxy-7-one-17β-ol;
10 Δ 5-Androstene-7α-one-16β-acetoxy-3β,17β-diol;
Δ 5-Androstene-16α-one-3β,7α,17β-triol;
Δ 5-Androstene-7α-one-3β,16α,17β-triol;
Δ 5-Androstene-3β-ol-7-one-17β-(1-methoxycyclopentane);
Δ 5-Androstene-7-one-3β,17β-di(1-methoxycyclopentane);
15 Δ 5-Androstene-7-one-17β-hydroxy-3-(1-methoxycyclopentane);
Δ 5-Androstene-3β,7α-diol-17β-(1-methoxycyclopentane);
Δ 5-Androstene-7α-ol-3β,17β-di(1-methoxycyclopentane);
Δ 5-Androstene-7α,17β-dihydroxy-3β(1-methoxycyclopentane);
Δ 5-Androstene-3β-ol-7-one-17β-(1-methoxycyclopentane);
20 Δ 5-Androstene-7-one-3β,17β-di(1-methoxycyclopentane);
Δ 5-Androstene-17β-ol-7-one-3β-(1-methoxycyclopentane);
Δ 5-Androstene-3β-acetoxy-7,16-dione-17β-(1-methoxycyclopentane);

- 25 Δ 5-Androstene-7,16-dione-3 β ,17 β -di(1-methoxycyclopentane);
- Δ 5-Androstene-3 β ,16 α -dihydroxy-7-one-17 β -(1-methoxycyclopentane);
- Δ 5-Androstene-7-one-16 α -hydroxy-3 β ,17 β -di(1-methoxycyclopentane);
- Δ 5-Androstene-3 β -propionyloxy-16 β -acetoxy-7-one-17 β -(1-methoxycyclopentane);
- 30 Δ 5-Androstene-7-one-16 β -acetoxy-3 β ,17 β -di(1-methoxycyclopentane) ;
- Δ 5-Androstene-3 β ,7 α -diol-16-one-17 β -(1-methoxycyclopentane);
- Δ 5-Androstene-7 α -ol-16-one-3 β ,17 β -di(1-methoxycyclopentane);
- Δ 5-Androstene-7 α ,17 β -dihydroxy-16-one-3 β ,-(1-methoxycyclopentane);
- 35 Δ 5-Androstene-3 β -ol-7,16-dione-17 β -(1-methoxycyclopentane);
- Δ 5-Androstene-17 β -ol-7,16-dione-3 β -(1-methoxycyclopentane);
- Δ 5-Androstene-7,16-dione-3 β ,17 β -di(1-methoxycyclopentane);
- Δ 5-Androstene-3 β ,16 α -diol,7-one-17 β -(1-methoxycyclopentane);
- Δ 5-Androstene-16 α -ol,7-one-3 β ,17 β -di(1-methoxycyclopentane);
- 40 Δ 5-Androstene-16 α ,17 β -dihydroxy,7-one-3 β -(1-methoxycyclopentane);
- Δ 5-Androstene-3 β -ol-7-one-17 β -cyclopent-1'-enyl;
- Δ 5-Androstene-7-one-3 β ,17 β -dicyclopent-1'-enyl;
- Δ 5-Androstene-7-one-17 β -hydroxy-3 β -cyclopent-1'-enyl;
- Δ 5-Androstene-3 β ,7 α -diol-17 β -cyclopent-1'-enyl;

45 Δ 5-Androstene-7α-ol-3β,17β-dicyclopent-1'-enyl;
 Δ 5-Androstene-7α,17β-dihydroxy-3β-cyclopent-1'-enyl;
 Δ 5-Androstene-3β-ol-7-one-17β-cyclopent-1'-enyl;
 Δ 5-Androstene-7-one-3β,17β-dicyclopent-1'-enyl;
 Δ 5-Androstene-17β-ol-7-one-3β-cyclopent-1'-enyl;
 50 Δ 5-Androstene-3β-acetoxy-7,16-dione-17β-cyclopent-1'-enyl;
 Δ 5-Androstene-7,16-dione-3β,17β-dicyclopent-1'-enyl;
 Δ 5-Androstene-3β,16α-dihydroxy-7-one-17β-cyclopent-1'-enyl;
 Δ 5-Androstene-7-one-16α-hydroxy-3β,17β-dicyclopent-1'-enyl;
 Δ 5-Androstene-3β-propionyloxy-16β-acetoxy-7-one-17β-cyclopent-1'-
 55 enyl;
 Δ 5-Androstene-7-one-16β-acetoxy-3β,17β-dicyclopent-1'-enyl;
 Δ 5-Androstene-3β,7α-diol-16-one-17β-cyclopent-1'-enyl;
 Δ 5-Androstene-7α-ol-16-one-3β,17β-dicyclopent-1'-enyl;
 Δ 5-Androstene-7α,17β-dihydroxy-16-one-3β-cyclopent-1'-enyl;
 60 Δ 5-Androstene-3β-ol-7,16-dione-17β-cyclopent-1'-enyl;
 Δ 5-Androstene-7,16-dione-3β,17β-dicyclopent-1'-enyl;
 Δ 5-Androstene-17β-ol-7,16-dione-3β-cyclopent-1'-enyl;
 Δ 5-Androstene-3β,16α-diol,7-one-17β-cyclopent-1'-enyl;
 Δ 5-Androstene-16α-ol,7-one-3β,17β-dicyclopent-1'-enyl;
 65 Δ 5-Androstene-16α,17β-diol,7-one-3β-cyclopent-1'-enyl;
 Δ 5-Androstene-3β-ol-7-one-17β-tetrahydropyranyl;

70 Δ 5-Androstene-7-one-3beta,17beta-ditetrahydropyranyl;
 Δ 5-Androstene-17beta-ol-7-one-3beta-tetrahydropyranyl;
 Δ 5-Androstene-3beta,7alpha-diol-17beta-tetrahydropyranyl;
 Δ 5-Androstene-7alpha-ol-3beta,17beta-ditetrahydropyranyl;
 Δ 5-Androstene-3beta-ol-7-one-17beta-tetrahydropyranyl;
 Δ 5-Androstene-7-one-3beta,17beta-ditetrahydropyranyl;
 Δ 5-Androstene-17beta-ol-7-one-3beta-tetrahydropyranyl;
 Δ 5-Androstene-3beta-acetoxy-7,16-dione-17beta-tetrahydropyranyl;
 75 Δ 5-Androstene-7,16-dione-3beta,17beta-ditetrahydropyranyl;
 Δ 5-Androstene-3beta,16alpha-dihydroxy-7-one-17beta-tetrahydropyranyl;
 Δ 5-Androstene-7-one-16alpha-hydroxy-3beta,17beta-ditetrahydropyranyl;
 Δ 5-Androstene-16alpha,17beta-dihydroxy-7-one-3beta-tetrahydropyranyl;
 Δ 5-Androstene-3beta-propionoxy-16beta-acetoxy-7-one-17beta-
 80 tetrahydropyranyl;
 Δ 5-Androstene-7-one-16beta-acetoxy-3beta,17beta-ditetrahydropyranyl;
 Δ 5-Androstene-3beta,7alpha-diol-16-one-17beta-tetrahydropyranyl;
 Δ 5-Androstene-7alpha-ol-16-one-3beta,17beta-ditetrahydropyranyl;
 Δ 5-Androstene-7alpha,17beta-diol-16-one-3beta-tetrahydropyranyl;
 85 Δ 5-Androstene-3beta-ol-7,16-dione-17beta-tetrahydropyranyl;
 Δ 5-Androstene-7,16-dione-3beta,17beta-ditetrahydropyranyl;
 Δ 5-Androstene-17beta-ol-7,16-dione-3beta-tetrahydropyranyl;
 Δ 5-Androstene-3beta,16alpha-diol,7-one-17beta-tetrahydropyranyl;

Δ 5-Androstene-16 α -ol,7-one-3 β ,17 β -ditetrahydropyranyl; and

Δ 5-Androstene-6 α ,17 β -diol,7-one-3 β -tetrahydropyranyl.

16. The method of claim 15 wherein the desired response includes an improved immune response, improved neurological condition, improved memory, or combinations thereof.
17. The method of claim 15 wherein the desired response includes increased fat reduction, increased energy, reduced fatigue or combinations thereof.
18. The method of claim 15 wherein the desired response includes an improvement in symptoms of one or more of the following ailments: HIV/Aids, heart disease, lupus, diabetes, depression, low sex drive, and muscular wasting disease.
19. The method of claim 15 wherein the desired response includes increased T3 thyroid hormone activity.
20. The method of claim 15 wherein the compound produces a substantial increase in oral bioavailability and plasma half life in mammals as compared to non-modified Δ 5-androstene compounds.